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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/550,118	09/19/2005	Hisashi Akiyama	10873.1780USWO	1217

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EXAMINER	
WEATHERBY, ELLSWORTH	

ART UNIT	PAPER NUMBER
3768	

MAIL DATE	DELIVERY MODE
09/12/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/550,118	AKIYAMA ET AL.	
	Examiner	Art Unit	
	ELLSWORTH WEATHERBY	3768	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 April 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 1-6 are objected to because of the following informalities: Regarding claims 1, 3 and 5, it is unclear as to what structure is defined by the term, outside. Regarding claims 2, 4 and 6, it is unclear what further structural limitation has been set forth. Regarding claims 3 and 5, these claims include improper means plus function language. Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al. (GB 2 216 660 A) in view of Pini (USPN 5,159,931).

Yamamoto et al '660 (hereinafter Yamamoto) teaches an ultrasonic probe, comprising: an ultrasonic transducer that scans an ultrasonic beam (Fig. 1, ref. 11); a transducer-swinging motor that allows the ultrasonic transducer to perform swing scanning in a direction crossing a scanning direction of the ultrasonic beam (Fig. 1, refs. 12-13); a rotary encoder that generates a pulse according to a rotational position of the transducer-swinging motor (Fig. 1, ref. 14); and an encoder correction device that stores an actual swing scanning angle of the ultrasonic transducer and outputs the stored actual swing scanning angle of the ultrasonic transducer to outside (pg. 5, par. 3-4). Yamamoto also teaches that the correction device stores swing directional angles that are different between a forward path of swing scanning and a return path of the swing scanning (pg. 6, par. 1).

Yamamoto et al. '660 teaches using a digital switch that can be used as a correcting signal to an output signal of the encoder (pg. 8, par. 2). However, Yamamoto does not expressly teach a counter that counts the outputs from the rotary encoder. Yamamoto also does not expressly teach a transmitting/receiving means that excites the vibrators of the ultrasonic transducer. Yamamoto also does not expressly teach a three-dimensional image processing means that forms a three-dimensional image.

In the same field of endeavor, Pini '931 (hereinafter) Pini teaches a counter that controls a counter for sectorial scanning and a counter for rotation control which are combined for controlling the stepper motor driver (col. 8, ll. 40-58). Pini also teaches a

transmitting/receiving means that excites the vibrators of the ultrasonic transducer (col. 9, ll. 12-17). Pini also teaches a three dimensional image processing means that produces a three-dimensional image for display (abstract; col. 8, ll. 33-39; col. 13, ll. 33-36; claim 1).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Yamamoto with Pini. The motivation to modify Yamamoto with Pini would have been to control and for the labeling of the images stored to memory, as taught by Pini (col. 8, ll. 59-67).

Response to Arguments

4. Applicant's arguments filed 04/01/2008 have been fully considered but they are not persuasive.

5. Applicant alleges that Yamamoto does not disclose an encoder correction ROM that stores an actual swing scanning angle of the ultrasonic transducer obtained by counting pulses from a rotary encoder and outputs such stored actual swing scanning angle to outside that claim 1 requires. Applicant goes on, alleging that Yamamoto cannot perform operations based on *actual swing angle*. The Examiner stands that Yamamoto teaches that when a transducer rotates in direction a or b {note: these are rotational directions, as evidenced at pg. 5, where the encoder detects the rotary angle of a motor and thereby rotary position of the transducer}, the position of rotary encoder varies causing a positional shift of the ultrasonic picture image in synchronism with the

output signal from the encoder (14) (page 6). Thus, it is clear that Yamamoto teaches a rotary encoder that generates a pulse according to a rotational position of the transducer. Here, Yamamoto also teaches an encoder correction ROM that stores an actual swing scanning angle of the ultrasonic transducer obtained by counting pulses from a rotary encoder and outputs such stored actual swing scanning angle to outside. This is evidenced by Yamamoto's disclosure, the position of the rotary encoder varies causing a positional shift of the ultrasonic picture image in synchronism with the output signal from the encoder (14) (page 6). However, Yamamoto goes on, teaching for example 4 bit digital switch having numerical values which are output according to an actual swing angle as detected by the encoder (page 8). The term *actual swing angle* does not exclude the swing angle as taught by Yamamoto because. For clarification see Fig. 2(b).

6. In view of the present amendment, defining ROM in the specification, the Examiner Stands that Yamamoto in view of Pini teaches all the limitations of the claimed invention. In teaching a 4bit digital switch having numerical values for outputting an actual swing angle, Yamamoto inherently teaches ROM. Furthermore, Pini teaches a read only memory (col. 13, ll. 57-60).

7. Accordingly, and because applicant has not presented any further arguments regarding the rejection of claims 1-6, claims 1-6 stand rejected.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELLSWORTH WEATHERBY whose telephone number is (571) 272-2248. The examiner can normally be reached on M-F 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on (571) 272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ruth S. Smith/
Primary Examiner, Art Unit 3737

EW